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EXAMINER

SHAFFER, ERIC T

ART UNIT

PAPER NUMBER

3623

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

10/057,983

Applicant(s)

HORNE, MARTIN

Examiner

Eric T. Shaffer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3- 25 is/are rejected.
- 7) ☐ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The following is an initial Office Action upon examination of the above-identified application on the merits. Claims 1 – 25 are pending in this application.

#### ***Claim Objections***

2. The abstract of the disclosure is objected to because it is too long. Said abstract should be limited in length to 50 to 150 words and should not exceed 25 lines of text. Correction is required. See MPEP § 608.01(b).

3. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and also to overcome the rejection under 35 U.S.C. 101.

#### ***Claim Rejections - 35 USC § 101***

5. Claims 15 - 24 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

In order for the claimed invention to be statutory subject matter, the claimed invention must fall within the technological arts. In the present case, claims 15 - 24 are directed to methods of planning, producing, monitoring, optimizing and modifying a supply plan, which does not use or effect technology to perform the claimed method.

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The invention as recited in the claims is merely an abstract idea that is not within the technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological arts fail to promote the "progress of science and the useful arts" (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter.

For a process claim to pass muster, the recited process must somehow affect, effect, or be effected by technology. For instance, a mere recitation in the preamble (i.e., intended use) or mere implication of employing a machine or article of manufacture to perform some or all of the recited steps does not confer statutory subject matter to an otherwise abstract idea. A mere intended or nominal use of a component, albeit within the technological arts, does not confer statutory subject matter to an otherwise abstract idea if the component does not affect or effect the underlying process. Specifically, claims 15 - 24 do not affect, effect, or are effected by technology, and thus do not recite statutory subject matter.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 3, 4 and 6 – 16 and 18 - 25 are rejected under 35 U.S.C. 102(b) as being anticipated by the book "Management Science" by Kamlesh Mathur and Daniel Solow, published in 1994.

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As per Claim 1, Mathur and Solow disclose a database containing information related to said component, said information describing the supply and changes to the supply (see page 212, table 6.4 and page 602, figure 12.18, their database containing this information is in the data disk that accompanies the book).

a supply planner, whereby said supply planner produces a supply plan using synchronized allocation (see page 80 – 83, their “Objective Function” that plans production to achieve specific monthly inventory levels”).

8. As per Claims 3 and 18, Mathur and Solow do not explicitly disclose a system and method further comprising a resource optimizer, wherein said resource optimizer uses matched sets logic. However, this feature is deemed to be inherent to the Mathur and Solow system as pages 114 – 119 show an objective function that obtains an optimal resource solution.

9. As per Claim 4, Mathur and Solow disclose a system comprising product attribute defining tool (see page 212, their attributes of iron ore are defined as “Ore from Butte Minerals, Ore from Cheyenne Mines” and “High-Grade or Low-Grade”).

10. As per Claims 6 and 19, Mathur and Solow disclose a system and method further including a constraint-based master planner, whereby said constraint-based master planner allows a user to specific one or more goals to be considered by the supply planner (see pages 246 - 250, their “linear programming formulation for a goal programming problem”).

11. As per Claim 7, Mathur and Solow disclose a system with the goals of:

Maximizing Inventory is anticipated the use of safety stock, which is “additional inventory available to cover fluctuations in demand during the lead time” (page 622).

Maximizing Customer Service is anticipated by increasing the service level, which is defined as the probability of “meeting the demand during an inventory cycle” (page 622).

Mathur and Solow do not explicitly disclose maximizing revenue, however this feature is deemed to be inherent with the maximization of inventory because having the most items on hand prevents a “stockout” (page 593), which means that the maximum amount of items are available for sale and thus the revenue from sales of the most number of items as possible is maximized.

Mathur and Solow do not explicitly disclose maximizing margin, however this feature is deemed to be inherent since margin is the result of revenues subtract inventory expenses. Therefore margin will be maximized when the total inventory costs are at a minimum (figure 12.10, page 613).

12. As per Claim 8, Mathur and Solow disclose system further comprising a product change analyzer, wherein said product change analyzer compares the effects of a change in the supply at different times (see page 638, their sensitivity analysis which compares how a change in holding cost affects inventory levels and a change in lead time affects order quantity).

13. As per Claim 9, Mathur and Solow disclose a system further comprising a comparer, wherein said comparer assesses differences in a supply plan for the supply of the component and a supply plan for a modified supply of the component (see page 126 – 127, section 4.3.1, their “sensitivity analysis of the objective functional coefficients” that measures “what happens to the optimal solution and objective function value when one objective coefficient is changed”).

14. As per Claims 10 and 23, Mathur and Solow disclose a system and method further comprising a resource requirements planner, wherein said resource requirements planner

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suggests a change in the supply to address a shortage identified by the supply planner (see page 594 - 600, their “economic-order quantity inventory model” changes by increasing supply by ordering more items).

15. As per Claim 11, Mathur and Solow disclose a system comprising a finite resource planner wherein said finite resource planner suggests an optimal use of the supply to address a shortage identified by the supply planner (see page 622, section 12.6.2 and figure 12.15 their use of supply safety stocks to determine how much of a remainder to cover shortages and fluctuations in demand during the lead time).

16. As per Claims 12 and 24, Mathur and Solow disclose a system and method that determines a remainder of the supply following implementation of the supply plan (see page 83, figure 3.2).

accesses the feasibility of a new order using on the remainder (see page 622, section 12.6.2 and figure 12.15 their use of safety stocks to determine how much of a remainder to cover fluctuations in demand during the lead time).

17. As per claim 13, Mathur and Solow teaches an interactive master scheduler (see page 640 – 642, their “materials requirement planner” that schedules when and in what quantity component supply parts are required).

18. As per Claim 14, Mathur and Solow disclose a system wherein said database comprises input data, user specified data, and output data (see page 212, Table 6.4, their “Production Plan for the Youngstown Mill” as user specified input data and page 213, Figure 6.15 “STORM Optimal Solution to the Global Planning Problem” as user specified output data).

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19. As per Claim 15, Mathur and Solow disclose a method for allocating a supply of a component, the method comprising the steps of forming a database containing information related to said component, said information describing the supply and changes to the supply (see page 215, figure 6.16, the range of supply quantity supplied verses changes in price).

producing a supply plan using synchronized allocation (see page 213, Figure 6.15).

20. As per Claim 16, Mathur and Solow disclose a method wherein said information defines the component using an engineering specification (see page 212 their “high-grade” or “low-grade” steel).

21. As per Claims 20 and 21, Mathur and Solow disclose methods comprising the steps of:

modifying said database to reflect a change in the supply at a first time and a second time and preparing a first and a second supply plan for said modified database (see page 602, figure 12.5, which changes from a reorder point of 346 and total cost is 4647.58 to page 626, figure 12.18 where the reorder point has changed to 575 and the total cost has changed to 6021.58).

22. As per Claim 22, Mathur and Solow disclose a method further comprising the steps of identifying a shortage in the supply created in said supply plan (see page 622, figure 12.15).

modifying said supply to address said shortage (see page 623 Figure 12.16 as their “Effect of Safety Stock on the inventory level”).

23. As per Claim 25, Mathur and Solow disclose a program storage device readable by a machine, tangibly embodying a program of instructions executable by a machine to perform method steps of forming a database containing information related to a supply of a component, said information describing the supply and changes to the supply (see page 212, table 6.4 and



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page 602, figure 12.18, their database containing this information is in the data disk that accompanies the book).

using synchronized allocation and matched sets logic to produce a supply plan for said supply (pages 81 – 86, their “the number of tons of increased production in month 1, 2, 3 and 4”).

allocating said supply using said supply plan (see pages 81 – 86, their “number of tons of increased production in month 1” and page 81 the “change-in-production cost in month 1, 2, 3 and 4”).

24. Claims 2 and 17 are a method and system dependent on claims 1 and 15 and contain the same limitations as claims 1 and 15, therefore, the same rejection is applied.

### ***Claim Rejections - 35 USC § 103***

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

26. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the book “Management Science” by Kamlesh Mathur and Daniel Solow, as applied to the claims above, in view of the book “Manufacturing Planning and Control Systems” by Vollmann, Berry & Whybark.

As per claim 5, Mathur and Solow teaches the database containing information related to supply and changes to the supply (see page 212, table 6.4 and page 602, figure 12.18) and the

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supply planner (see page 80 – 83”) inherited from the independent claim 1 as well as the system comprising product attribute defining tool (see page 212) inherited from claim 4. Although Mathur and Solow do teach a list of supply items in a database and teaches the attributes of said supply items, they do not specifically mention the use of the smartbill system.

Vollmann, Berry & Whybark teach a method of measuring, planning and maintaining inventory levels in a manufacturing environment. Their method incorporates inventory reorder quantities, reorder points, planning, goals, forecasting, and measuring the effect of changes to inventory on the afore mentioned items. Vollmann, Berry & Whybark also teach the smartbill (page 227 as their “superbill” system).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a smart bill system into the Mathur and Solow methodology because organizing the database list of supply items according to the end item to which each supply item component supply item is attached would be a necessary step in determining which parts to order, stock and keep in inventory. Knowing which items are used most frequently in a component would also assist in determining which items to stock. If a component contained multiple numbers of a specific part, it would be logical to stock a higher number of said part than a part that only occurs once in a component. Therefore, such a smart bill would greatly increase the efficiency and accuracy of a given supply inventory method.

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***Conclusion***

27. No claims were allowed and all claims were rejected.
28. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
- Jameson, (US 6,219,649) – Allocation of manufacturing resources  
Dembo (US 5,148,365) – Financial scenario optimization device  
Hausman (US 6,086,619) – Linear and Quadratic Programming invention  
Brinkley (US 5,963,919) – Inventory management strategy method  
Shaw (US 6,101,479) – Company resource allocation system
29. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric Shaffer whose telephone number is (703) 305-5283. The Examiner can normally be reached on Monday-Friday, 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (703) 305-9643.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Receptionist whose telephone number is (703) 305-3900.

Any response to this action should be mailed to:  
Commissioner of Patents and Trademarks  
Washington D.C. 20231

Or faxed to:

(703) 746-7238 [After Final communications, labeled "Box AF"]

(703) 746-7239 [Official communications]

(703) 706-9124 [Informal/Draft communications, labeled  
"PROPOSED" or "DRAFT"]

Hand delivered responses should be brought to Crystal Park 5, 2451 Crystal Drive, Arlington, VA, 7<sup>th</sup> floor receptionist.

ETS  
April 22, 2003

*Susanna Diaz*  
Susanna Diaz  
Patent Examiner  
Art Unit 3623